

AMENDMENTIN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the current application. Please amend the claims as follows:

1. (Currently Amended) ~~A latch-free button structure for an electronic device having at least a housing, a button cover and a circuit board, wherein the circuit board has a contact point, and is enclosed inside the housing and the button is positioned between the button cover and the housing, the button comprising:~~

a button housing, a button cover and a circuit board, wherein the circuit board includes a contact point, and is substantially disposed inside the button housing;

a button body having a plurality of side edges, a top first section to receive pressure, and a bottom second section, opposite said first section and a at least one wing plate, wherein the at least one wing plate includes a first end and a second end opposite said first end, and wherein the first end having a top end joined is coupled to the one of said side edges of the button body to form a junction, and is configured to arc downward with the wing plate arcing down from the junction;

a positioning plate positioned above the circuit board contact point and coupled to the lying flat on an outer surface of the housing and attached to the lower bottom second end of the wing plate; and

a contact rod attached coupled to the bottom second section of the button body, wherein height from the bottom of a distance between the contact rod to and the contact point on the circuit board is substantially comprises distance B, height from distance between the bottom second section of the button body to the and an outer surface of the button housing is substantially comprises distance C, height of the wing plate is substantially comprises height A, height of the a sidewall of the button cover next to the button body is substantially comprises height D and height from the top first section of the button body to the top first end of the wing plate is substantially comprises height E, and a relationship

~~between A, B, C, D, E is set to have  $E - B > D$  the difference between height E and distance B is substantially greater than height D.~~

2. (Currently Amended) The button structure of claim 1, wherein ~~the relationship between A, B, C, D, E is further set to have  $E - D > A$  the difference between height E and height D is substantially greater than height A.~~

3. (Currently Amended) The button structure of claim 1, wherein ~~the relationship between A, B, C, D, E is further set to have  $D > A$  height D is substantially greater than height A.~~

4. (Currently Amended) The button structure of claim 1, wherein ~~the relationship between A, B, C, D, E is further set to have  $A \geq C$  height A is substantially greater than or equal to distance C.~~

5. (Currently Amended) The button structure of claim 1, wherein ~~the relationship between A, B, C, D, E is further set to have  $A \geq B$  height A is substantially greater than or equal to distance B.~~

6. (Currently Amended) The button structure of claim 1, wherein ~~the relationship between A, B, C, D, E is further set to have  $C \geq B$  distance C is substantially greater than or equal to distance B.~~

7. (Currently Amended) The button structure of claim 1, wherein the body, the at least one wing plate, the positioning plate and the contact rod are manufactured ~~together~~ as an integrated unit.

8. (Currently Amended) The button structure of claim 1, wherein the button body and the contact rod are separately fabricated and then assembled ~~together~~ thereafter.

9. (Currently Amended) The button structure of claim 1, wherein the at least one wing plate is comprises elastic and is capable of returning the button body to its original configuration after releasing from a pressed position.

10. (Currently Amended) A design method for producing ~~of forming~~ a latch-free button inside an electronic device having at least a housing, a button cover and a circuit board, wherein the circuit board has a contact point, and is enclosed inside the housing ~~and the button is positioned between the button cover and the housing, the button comprising:~~

~~forming a button body having a plurality of side edges, a top first section to receive pressure, and a bottom second section, opposite said first section and a at least one wing plate, wherein the at least one wing plate includes a first end and a second end opposite said first end, and wherein the first end having a top end joined is coupled to the one of said side edges of the button body to form a junction, and is configured to arc downward with the wing plate arcing down from the junction;~~

~~forming a positioning plate lying substantially flat on an outer surface of the housing and attached to the lower end of the wing plate; and~~

~~a contact rod attached coupled to the bottom second section of the button body, wherein height from the bottom of a distance between the contact rod to and the contact point on the circuit board is substantially comprises distance B, height from distance between the bottom second section of the button body to the and an outer surface of the button housing is substantially comprises distance C, height of the wing plate is substantially comprises height A, height of the a sidewall of the button cover next to the button body is substantially comprises height D and height from the top first section of the button body to the top first end of the wing plate is substantially comprises height E, and a relationship between A, B, C, D, E is set to have  $E - B > D$  the difference between height E and distance B is substantially greater than height D.~~

11. (Currently Amended) The design method of claim 10, wherein ~~the relationship between A, B, C, D, E is further set to have  $E - D > A$  the difference between height E and height D is substantially greater than height A.~~

12. (Currently Amended) The design method of claim 10, wherein ~~the relationship between A, B, C, D, E is further set to have  $D > A$  height D is substantially greater than height A.~~

13. (Currently Amended) The design method of claim 10, wherein the relationship between A, B, C, D, E is further set to have A ≥ C height A is substantially greater than or equal to distance C.

14. (Currently Amended) The design method of claim 10, wherein the relationship between A, B, C, D, E is further set to have A ≥ B height A is substantially greater than or equal to distance B.

15. (Currently Amended) The design method of claim 10, wherein the relationship between A, B, C, D, E is further set to have C ≥ B distance C is substantially greater than or equal to distance B.

16. (Currently Amended) A design method for producing a latch-free of forming a button inside an electronic device having at least a housing, a button cover and a circuit board, wherein the circuit board is enclosed inside the housing and the button is positioned between the button cover and the housing, the button comprising:

forming a button body having a plurality of side edges, a top first section to receive pressure, and a bottom second section, opposite said first section and a at least one wing plate, wherein the at least one wing plate includes a first end and a second end opposite said first end, and wherein the first end having a top end joined is coupled to the one of said side edges of the button body to form a junction, and is configured to arc downward with the wing plate arcing down from the junction;

forming a positioning plate positioned above the circuit board contact point and coupled to the wing plate flat on an outer surface of the housing and attached to the lower bottom second end of the wing plate; and

forming a contact rod attached coupled to the bottom section of the button body, and the design method for the button includes:

tailoring the button structure such that wherein the top end of the button body always is formed to remains remain above the top surface of the button cover while the body of the button travels the entire permissible during the range of movement of the button body; and

~~tailoring the button structure such that the total amount of deformation in the wing plate always remains below the height of the wing plate while the body of the button travels the entire permissible range of movement.~~

17. (New) An electronic device, comprising:

a circuit board having a plurality of contact points;  
a plurality of button structures, wherein at least a portion of the plurality of button structures are positioned proximate to a respective contact point, and wherein the button structures include:  
a button housing substantially enclosing at least one circuit board contact point;  
a button body having a plurality of side edges, a first section, a second section opposite said first section, and at least one wing plate, wherein the at least one wing plate includes a first end and a second end, and wherein the first end is coupled to one of said side edges of the button body at a junction, and forms an arc downward from the junction;  
a positioning plate positioned above the circuit board contact point; and  
a contact rod coupled to the bottom section of the button body, wherein a distance between a contact rod and a contact point on the circuit board substantially comprises distance B, distance between the second section of the button body and an outer surface of the housing substantially comprises distance C, height of the wing plate substantially comprises height A, height of a sidewall of the button cover substantially comprises height D and height from the top of the button body to the top end of the wing plate substantially comprises height E, and the difference between height E and distance B is substantially greater than height D.